# **VESTAKEEP® 4000G**

Polyetheretherketone Evonik Industries AG



## **Technical Data**

#### **Product Description**

High-viscosity, unreinforced polyether ether ketone

VESTAKEEP 4000G is a high-viscosity, unreinforced polyether ether ketone for injection molding and extrusion.

The semi-crystalline polymer features superior thermal and chemical resistance. Parts made from VESTAKEEP 4000G are self-extinguishing.

VESTAKEEP 4000G can be processed by common machines for thermoplastics.

We recommend a melt temperature between 370°C and 380°C during the injection molding process. The mold temperature should be within a range of 160°C to 200°C, preferably 180°C.

General		
Material Status	<ul> <li>Commercial: Active</li> </ul>	
Literature <sup>1</sup>	<ul> <li>Brochure (English)</li> <li>Processing (English)</li> <li>Technical Datasheet (English)</li> </ul>	lish)
Search for UL Yellow Card	<ul> <li>Evonik Industries AG</li> <li>VESTAKEEP®</li> </ul>	
Availability	<ul> <li>Europe</li> </ul>	North America
Features	<ul><li>Chemical Resistant</li><li>High Viscosity</li></ul>	<ul><li>Self Extinguishing</li><li>Semi Crystalline</li></ul>
Forms	Granules	
Processing Method	Extrusion	Injection Molding

Physical	Nominal Value Unit	Test Method
Density (23°C)	1.30 g/cm <sup>3</sup>	ISO 1183
Melt Volume-Flow Rate (MVR) (380°C/5.0 kg)	11 cm³/10min	ISO 1133
Molding Shrinkage		ISO 294-4
Across Flow : 2.00 mm	1.1 %	
Flow : 2.00 mm	0.90 %	
Mechanical	Nominal Value Unit	Test Method
Tensile Modulus	3500 MPa	ISO 527-1
Tensile Stress (Yield)	96.0 MPa	ISO 527-2
Tensile Strain		ISO 527-2
Yield	5.0 %	
Break	30 %	
Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength		ISO 179/1eA
-30°C, Complete Break	6.0 kJ/m <sup>2</sup>	
23°C, Complete Break	7.0 kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength		ISO 179/1eU
-30°C	No Break	
23°C	No Break	
Thermal	Nominal Value Unit	Test Method
Vicat Softening Temperature		
	305 °C	ISO 306/B
	335 °C	ISO 306/A
Melting Temperature <sup>3</sup>	340 °C	ISO 11357-3
CLTE - Flow (23 to 55°C)	6.0E-4 cm/cm/°C	ISO 11359-2



1 of 2

UL and the UL logo are trademarks of UL LLC © 2021. All Rights Reserved. UL Prospector | 800-788-4668 or 307-742-9227 | www.ulprospector.com. Form No. TDS-102354-en Document Created: Tuesday, September 28, 2021 Added to Prospector: May 2007 Last Updated: 5/19/2017

The information presented here was acquired by UL from the producer of the product or material or original information provider. However, UL assumes no responsibility or liability for the accuracy of the information contained on this website and strongly encourages that upon final product or material selection information is validated with the manufacturer. This website provides links to other websites owned by third parties. The content of such third party sites is not within our control, and we cannot and will not take responsibility for the information or content.

# **VESTAKEEP® 4000G**

Polyetheretherketone Evonik Industries AG

# PROSPECTOR® www.ulprospector.com

Flame Rating (3.2 mm)       V-0       UL 94         Glow Wire Flammability Index (2.0 mm)       960 °C       IEC 60695-2-12         Glow Wire Ignition Temperature (2.0 mm)       825 °C       IEC 60695-2-13         njection         Nominal Value Unit         Processing (Melt) Temp       370 to 380 °C         Mold Temperature       160 to 200 °C	Electrical	Nominal Value Unit	Test Method
Electric Strength 4         16 kV/mm         IEC 60243-1           Relative Permittivity         IEC 60250           50 Hz         2.80           1 MHz         2.80           Comparative Tracking Index         IEC 60112           Solution A         200 V           Solution A <sup>5</sup> 175 V           Tammability         Nominal Value Unit         Test Method           Flame Rating (3.2 mm)         V-0         UL 94           Glow Wire Flammability Index (2.0 mm)         960 °C         IEC 60695-2-12           Glow Wire Ignition Temperature (2.0 mm)         825 °C         IEC 60695-2-13           The Comparature Test Method         370 to 380 °C         106 to 200 °C           Mold Temperature         160 to 200 °C         160 to 200 °C	Surface Resistivity	1.0E+14 ohms	IEC 60093
Relative Permittivity         IEC 60250           50 Hz         2.80           1 MHz         2.80           Comparative Tracking Index         IEC 60112           Solution A         200 V           Solution A <sup>5</sup> 175 V           Flammability         Nominal Value Unit         Test Method           Flame Rating (3.2 mm)         V-0         UL 94           Glow Wire Flammability Index (2.0 mm)         960 °C         IEC 60695-2-12           Glow Wire Ignition Temperature (2.0 mm)         825 °C         IEC 60695-2-13           releftion         Nominal Value Unit         Test Method           Processing (Melt) Temp         370 to 380 °C         160 to 200 °C           Mold Temperature         160 to 200 °C         160 to 200 °C           Extrusion         Nominal Value Unit         Test Method	Volume Resistivity	1.0E+15 ohms cm	IEC 60093
50 Hz       2.80         1 MHz       2.80         Comparative Tracking Index       IEC 60112         Solution A       200 V         Solution A <sup>5</sup> 175 V         Flam Rating (3.2 mm)       Nominal Value Unit         Flame Rating (3.2 mm)       V-0         Glow Wire Flammability Index (2.0 mm)       960 °C         Glow Wire Ignition Temperature (2.0 mm)       825 °C         IEC 60695-2-12       IEC 60695-2-13         Modi Temperature       370 to 380 °C         Mold Temperature       160 to 200 °C         Extrusion       Nominal Value Unit	Electric Strength <sup>4</sup>	16 kV/mm	IEC 60243-1
1 MHz2.80Comparative Tracking IndexIEC 60112Solution A200 VSolution A 5175 VFlame Rating (3.2 mm)V-0Glow Wire Flammability Index (2.0 mm)960 °CIEC 60695-2-12Glow Wire Ignition Temperature (2.0 mm)njectionNominal Value UnitProcessing (Melt) Temp370 to 380 °CMold Temperature160 to 200 °CExtrusionNominal Value Unit	Relative Permittivity		IEC 60250
Comparative Tracking IndexIEC 60112Solution A200 VSolution A 5175 VFlammabilityNominal Value UnitTest MethodFlame Rating (3.2 mm)V-0UL 94Glow Wire Flammability Index (2.0 mm)960 °CIEC 60695-2-12Glow Wire Ignition Temperature (2.0 mm)825 °CIEC 60695-2-13InjectionNominal Value UnitProcessing (Melt) Temp370 to 380 °CMold Temperature160 to 200 °CExtrusionNominal Value Unit	50 Hz	2.80	
Solution A200 VSolution A 5175 VFlammabilityNominal Value UnitTest MethodFlame Rating (3.2 mm)V-0UL 94Glow Wire Flammability Index (2.0 mm)960 °CIEC 60695-2-12Glow Wire Ignition Temperature (2.0 mm)825 °CIEC 60695-2-13InjectionNominal Value UnitProcessing (Melt) Temp370 to 380 °CMold Temperature160 to 200 °CExtrusionNominal Value Unit	1 MHz	2.80	
Solution A <sup>5</sup> 175 V         Flammability       Nominal Value Unit       Test Method         Flame Rating (3.2 mm)       V-0       UL 94         Glow Wire Flammability Index (2.0 mm)       960 °C       IEC 60695-2-12         Glow Wire Ignition Temperature (2.0 mm)       825 °C       IEC 60695-2-13         njection       Nominal Value Unit       Processing (Melt) Temp       370 to 380 °C         Mold Temperature       160 to 200 °C       Extrusion       Nominal Value Unit	Comparative Tracking Index		IEC 60112
FlammabilityNominal Value UnitTest MethodFlame Rating (3.2 mm)V-0UL 94Glow Wire Flammability Index (2.0 mm)960 °CIEC 60695-2-12Glow Wire Ignition Temperature (2.0 mm)825 °CIEC 60695-2-13njectionNominal Value UnitProcessing (Melt) Temp370 to 380 °CMold Temperature160 to 200 °CExtrusionNominal Value Unit	Solution A	200 V	
Flame Rating (3.2 mm)       V-0       UL 94         Glow Wire Flammability Index (2.0 mm)       960 °C       IEC 60695-2-12         Glow Wire Ignition Temperature (2.0 mm)       825 °C       IEC 60695-2-13         njection       Nominal Value Unit         Processing (Melt) Temp       370 to 380 °C         Mold Temperature       160 to 200 °C         Extrusion       Nominal Value Unit	Solution A <sup>5</sup>	175 V	
Glow Wire Flammability Index (2.0 mm)       960 °C       IEC 60695-2-12         Glow Wire Ignition Temperature (2.0 mm)       825 °C       IEC 60695-2-13         njection       Nominal Value Unit         Processing (Melt) Temp       370 to 380 °C         Mold Temperature       160 to 200 °C         Extrusion       Nominal Value Unit	Flammability	Nominal Value Unit	Test Method
Glow Wire Ignition Temperature (2.0 mm)       825 °C       IEC 60695-2-13         njection       Nominal Value Unit         Processing (Melt) Temp       370 to 380 °C         Mold Temperature       160 to 200 °C         Extrusion       Nominal Value Unit	Flame Rating (3.2 mm)	V-0	UL 94
njectionNominal Value UnitProcessing (Melt) Temp370 to 380 °CMold Temperature160 to 200 °CExtrusionNominal Value Unit	Glow Wire Flammability Index (2.0 mm)	960 °C	IEC 60695-2-12
Processing (Melt) Temp     370 to 380 °C       Mold Temperature     160 to 200 °C       Extrusion     Nominal Value Unit	Glow Wire Ignition Temperature (2.0 mm)	825 °C	IEC 60695-2-13
Mold Temperature     160 to 200 °C       Extrusion     Nominal Value Unit	Injection	Nominal Value Unit	
Extrusion Nominal Value Unit	Processing (Melt) Temp	370 to 380 °C	
	Mold Temperature	160 to 200 °C	
Hopper Temperature 100 to 120 °C	Extrusion	Nominal Value Unit	
	Hopper Temperature	100 to 120 °C	

Cylinder Zone 1 Temp.

### Notes

<sup>1</sup> These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

350 to 380 °C

<sup>2</sup> Typical properties: these are not to be construed as specifications.

<sup>3</sup> 2nd heating

<sup>4</sup> K20/P50

<sup>5</sup> 100 drops value



2 of 2

UL and the UL logo are trademarks of UL LLC © 2021. All Rights Reserved. UL Prospector | 800-788-4668 or 307-742-9227 | www.ulprospector.com.

The information presented here was acquired by UL from the producer of the product or material or original information provider. However, UL assumes no responsibility or liability for the accuracy of the information contained on this website and strongly encourages that upon final product or material selection information is validated with the manufacturer. This website provides links to other websites owned by third parties. The content of such third party sites is not within our control, and we cannot and will not take responsibility for the information or content. Form No. TDS-102354-en Document Created: Tuesday, September 28, 2021 Added to Prospector: May 2007 Last Updated: 5/19/2017